Panasonic MII

STUDIO VTR

AU-65H

STUDIO PLAYER

AU-63H

STUDIO PLAYER

AU-62H

PAL

Panasonic

1. Features

High quality pictures
The MII series VTR developed for production/broadcast purposes ensures high quality pictures, comparable to those of 1" tape, by using ½" metal tape.

Extended recording time (AU-65H)
A recording of up to 95 min. is possible, using ½" metal tape. A small, 20-minute cassette can also be used without an adaptor.

Built-in 3-dimensional digital TBC
The unit contains a 3-dimensional digital TBC equipped with field memory so that stable playback pictures with minimal jitter can be obtained.

Freeze function
The adoption of 3-dimensional digital TBC made it possible to view noise-free still pictures (freeze frame).

P IN P (picture-in-picture) function (AU-65H)
This function enables a viewer to monitor playback signals and input signals on the same screen at the same time.

Color framing
This unit's ability to control color framing in a 4-field sequence assures optimum picture quality in composite signal editing, recording and playback. Sub-carrier phase can be adjusted in relation to the input reference signal. CF, REF and INPUT SCH LED indicators are provided to indicate their functions.

Editing functions (AU-65H)
The unit features auto/manual editing in assemble and insert modes (with two units). Individual/combination editing is possible in VIDEO•FM, AUDIO CH1/CH2, and TIME CODE modes. Time code editing can also be performed.

Variable memory editing* (AU-63H and AU-65H combination)
In the variable mode, the operating conditions (tape direction and speed change) within the range extending from normal speed in reverse (−1×) to twice normal speed forward (2×) can be entered and played back.

*Be sure that this unit does not use an Auto Tracking Control, in order to avoid creating noise on the screen. This function may be convenient, however, when the unit is used as the recorder VTR and controls the player VTR having the Auto Tracking.

Audio split editing (AU-65H)
It is possible to enter the audio edit point separate from video, and audio edit can be individually performed with its edit point deflected from the video edit point.

Setting of editing points (AU-65H)
Editing points can be readily set by the shuttle, jog and variable functions. Tape travels at speeds ranging from still to +/−16× (setting available to 32×) in the shuttle mode, −1× to +2× in the jog mode, and −1× to +2× in the variable mode.

Tape speed override (TSO)
This function enables the tape speed to be manually adjusted in 1% increments up to 15% faster or slower than the normal playback speed.
Tape speed override is presettable from the internal switch.

Amorphous heads
This unit is equipped with amorphous video heads designed to match the magnetic characteristics of the metal tape used by MII system VTRs. Together, they greatly improve high frequency response and decrease the eddy current loss.

4-channel audio*
The unit's audio is a 4 channel design with two channels of linear audio and two channels of high quality FM sound. Audio Mixing Output connector serves mixed sound of CH1 or CH2 audio and CH3 or CH4 audio.
The Dolby* C Noise Reduction System is provided for the linear channels.

Built-in time code generator/reader (TCG/TCR)
This unit comes with a time code generator and time code reader.

Setup operation viewing the display menu
Before operating the VTR, you can set up the unit viewing the display menu on the TV Monitor.

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Large character display
The display is 32 characters by 2 lines. Information is displayed concerning the status of the VTR such as, tape time, editing data, speed data and error messages.

Shuttle search at up to 32 times normal speed plus jog search
The shuttle mode allows high-speed access at a maximum of 16 times (setting available to 32 times) normal speed in both forward and reverse direction. The jog mode allows speed change from −1× to 2× times normal speed. The operation conditions are displayed in large size characters on the display for enhanced operation convenience.

Machine-to-machine synchronization and sync roll
This unit provides easy synchronization between two VTRs. When used with the optional Editing Controller (AG-A800), this bridge-through connection allows sync roll with simple connections.

Automatic standard/non-standard selection (AU-65H)
This unit automatically detects whether the input signal is RS-170A standard signal or non-standard.

Tape remaining and lap time indication
Tape remaining and edit duration time are indicated by digit, making it easy to see how much tape remains and to check the duration time of the IN/OUT point.

Encoder remote
The built-in encoder is controllable using the encoder remote connector (15P), provided on the rear panel.

Serial (9P) remote
This unit is equipped with serial (9P) remote interface. When editing with two VTR units, the player can be remotely controlled from the recorder using the serial 9P cable connection.

Parallel (50P) remote
When the optional parallel (50P) remote connector is used, remote control can be performed from a distance by parallel remote mode.

Superimpose
The data in a tape position and the VTR operation mode can be imposed on the television screen.

Component input/output connectors
(Input connector : AU-65H)
Component input/output connectors are provided for interface with other equipment at the component signal level.

YC input and output connectors (for wide screen)
(Input connector : AU-65H)
YC input and output connectors have been provided to enable interfacing with other equipment using the YC signals.
There is also a function which automatically identifies whether the video signals for a regular NTSC size screen (aspect ratio of 3:4) or video signals for a wide size screen (aspect ratio of 9:16) are input to, or output from, these connectors.

Recorder inhibit (AU-65H)
Individual record inhibits are provided for Video, Linear Audio and Time Code. With the switches ON, both recording and editing are inhibited.

Rack mount
The AU-65H/63H/62H can be mounted in a standard EIA 19" rack.

Specifications on AU-65H

Power Supply:	220–240 V AC, 50–60 Hz
Power Consumption:	180 W

Recording System:	MII format, 4 rotary heads, 2-track helical scanning
Tape Speed:	66.295 mm/sec
Tape:	1/2-inch metal particle tape
Recording Time:	97 minutes (with AU-MPL90 tape)
FF/REW Time:	Less than 3 minutes (with AU-MPL60 tape)
Operating Temperature:	5°C to 40°C
Operating Humidity:	Under 80%
Dimensions (W×H×D):	444×291×574 mm
Weight:	34 kg

VIDEO

Television Format:	PAL TV system; 625 lines, 50 fields	
Modulation System:	Y; Frequency modulation	
	C; Time compressed multiplexing, frequency modulation (P_B, P_R)	
Bandwidth:	Y;	25 Hz to 5.0 MHz (+1/−2 dB) 5.5 MHz (−3.5 dB)
	C (P_B, P_R);	25 Hz to 1.8 MHz (+1/−2 dB) 2.0 MHz (−3.5 dB)
S/N Ratio:	Y;	Better than 47 dB (200 kHz to 5 MHz)
	C (P_B, P_R);	Better than 48 dB
	C (AM);	Better than 48 dB (1 kHz to 500 kHz)
	C (PM);	Better than 50 dB (1 kHz to 500 kHz)
K Factor:	2 T;	Less than 2%
	5 T;	Less than 3%
Y/C Delay:	Less than 20ns	
Linearity:	Less than 3%	

AUDIO

Linear (CH1/CH2)

Frequency Response:	50 Hz to 15 kHz (+2/−3 dB)
S/N Ratio:	Better than 56 dB (Dolby NR OFF) (at 3% distortion)
Distortion:	Less than 1.0% at 1 kHz standard input level
Wow and flutter:	Less than 0.1% (DIN WTD)
Erase:	Less than −65 dB at 1 kHz

FM (CH3/CH4)

Frequency Response:	20 Hz to 20 kHz (+1/−2 dB)
Dynamic Range:	More than 85 dB (A WTD)
Distortion:	Less than 0.5% at 1 kHz standard input level
Crosstalk:	Less than −65 dB at 1 kHz standard input level

VIDEO INPUT

VIDEO IN:	BNC×2, loop through with 75Ω ON/OFF switch, 1.0 Vp-p
REF VIDEO IN:	BNC×2, loop through with 75Ω ON/OFF switch, 1.0 Vp-p
COMPONENT IN:	BNC×3
	Y; 1.0 Vp-p, 75Ω
	P_B; 0.7 Vp-p, 75Ω
	P_R; 0.7 Vp-p, 75Ω
YC (S1-VIDEO) IN:	S1-VIDEO (4P)×1
	Y; 1.0 Vp-p, 75Ω
	C; 0.3 Vp-p (burst level), 75Ω
	(100% colour bars, 0% setup)

VIDEO OUTPUT

VIDEO OUT:	BNC×3
	OUT1; SYNC ON/OFF
	OUT2; COMPOSITE OUT
	OUT3; TC superimpose & P IN P ON/OFF
	Each output; 1.0 Vp-p, 75Ω
COMPONENT OUT:	BNC×3
	Y; 1.0 Vp-p, 75Ω
	P_B; 0.7 Vp-p, 75Ω
	P_R; 0.7 Vp-p, 75Ω
YC (S1-VIDEO) OUT:	S1-VIDEO (4P)×1
	Y; 1.0 Vp-p, 75Ω
	C; 0.3 Vp-p (burst level), 75Ω
	(100% colour bars, 0% setup)

AUDIO INPUT

AUDIO IN:	XLR 3P×4, CH1/CH2 (linear), CH3/CH4 (FM), −20/0/+4 dBu
	More than 10 kΩ/600Ω, balanced
TIME CODE IN:	BNC×1, 0.5 V to 8 Vp-p, more than 10 kΩ, unbalanced

AUDIO OUTPUT

AUDIO OUT:	XLR 3P×4, CH1/CH2 (linear), CH3/CH4 (FM), −20/0/+4 dBu
	Less than 50Ω, balanced
TIME CODE OUT:	BNC×1, 2.2 Vp-p, less than 50Ω, unbalanced
MONITOR OUT:	XLR 3P×1 (MIX), +0 dBu, less than 50Ω, balanced
HEADPHONES OUT:	6.3 mm stereo jack, −20 dBu to −∞ (variable), 8Ω

REMOTE CONNECTORS

ENCODER REMOTE:	15P×1
REMOTE 2:	9P×2, RS-422A serial remote

STANDARD ACCESSORIES

Power cord
Serial 9-pin cord

OPTIONAL ACCESSORIES

REMOTE 1 (parallel remote) connector: AU-MK25

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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Specifications on AU-63H/62H

GENERAL

Power supply: 220–240 V AC, 50–60 Hz
Power consumption: AU-63H; 140W / AU-62H; 135W

is the safety information.

Playback system :	MII format, 4 rotary heads, 2-track helical scanning system
Tape :	1/2" Metal Particle (MP) tape
Tape speed :	66.295 mm/sec
Playback time :	97 minutes (using AU-M90L tape)
FF/REW time :	Max. 3 minutes (using AU-M60L tape)
Operating temperature range :	5°C–40°C
Operating humidity :	Less than 80%
Dimensions :	444 (W)×291 (H)×574 (D) mm
Weight :	33 kg

VIDEO

Television Format:	PAL with 625 lines, 50 fields	
Modulation system:	Y;	Frequency modulation
	C;	Time base compression time division Frequency modulation (P_B, P_R)
Bandwidth :	Y;	25 Hz to 5.0 MHz (+1.0/−2 dB) 5.5 MHz (−3.5 dB)
	P_B, P_R;	25 Hz to 1.8 MHz (+1.0/−2 dB) 2.0 MHz (−3.5 dB)
S/N ratio :	Y (Component);	Better than 46 dB (AU-63)/47 dB (AU-62) (200 kHz to 5 MHz, SC trap OFF)
	C (P_B, P_R);	Better than 48 dB (1.6 MHz LPF)
	C (AM, PM);	48 dB (AM)/50 dB (PM) (1 kHz to 500 kHz)
K factor :	Less than 2%	
Y/C delay :	Less than 20ns	

AUDIO

Linear (CH1/CH2)

Frequency response :	50 Hz to 15 kHz (+2.0/−3 dB)
S/N ratio (3% distortion) :	Better than 56 dB (Dolby NR OFF)
Distortion :	Less than 1% (1 kHz standard signal)
Wow/flutter :	0.1% (DIN WTD)

FM (CH3/CH4)

Frequency response :	20 Hz to 20 kHz (+1/−2 dB)
Dynamic range :	More than 80 dB
Distortion :	Less than 0.5% (1 kHz standard signal)
Crosstalk :	Less than −65 dB (1 kHz standard signal)

VIDEO IN connectors

REF VIDEO IN :	BNC×2, loop through 1.0 Vp-p ±0.3 Vp-p, 75Ω ON/OFF

VIDEO OUT connectors

VIDEO OUT:	BNC×3
	OUT1 ; SYNC ON/OFF
	OUT2 ; COMPOSITE OUT
	OUT3 ; TC superimposing ON/OFF
	1.0 Vp-p ±0.05 Vp-p, 75Ω for all outputs
COMPONENT OUT:	BNC×3
	Y ; 1.0 Vp-p, 75Ω
	P_B; 0.7 Vp-p, 75Ω
	P_R ; 0.7 Vp-p, 75Ω
YC (S1 VIDEO) OUT:	S1 VIDEO (4P)×1
	Y; 1.0Vp-p 75Ω
	C; 0.3 Vp-p (Burst Level) 75Ω
	(100% colour bars, 0% set up)

AUDIO OUT connectors

AUDIO OUT:	XLR 3P×4
	CH1/CH2 (linear), CH3/CH4 (FM)
	−20/0/+4 dBu selectable, less than 50Ω balanced
TIME CODE OUT:	BNC×1
	2.2 Vp-p, less than 50Ω unbalanced
MONITOR OUT:	XLR 3P×1 (MIX)
	0 dBu, less than 50Ω balanced
HEADPHONES OUT:	1/4" phone stereo jack
	−20 dBu to −∞ (variable), 8Ω

Remote connectors

ENCODER REMOTE:	15P×1
REMOTE 2:	9P×1
	RS-422A serial remote
(REMOTE 1):	50P (option)×1
	parallel remote

Standard accessories

Power cord:	1
Serial 9-pin cord:	1

Optional accessories

Parallel remote connector:	AU-MK25

Wheight and dimensions shown are approximate.
Specifications are subject to change without notice.

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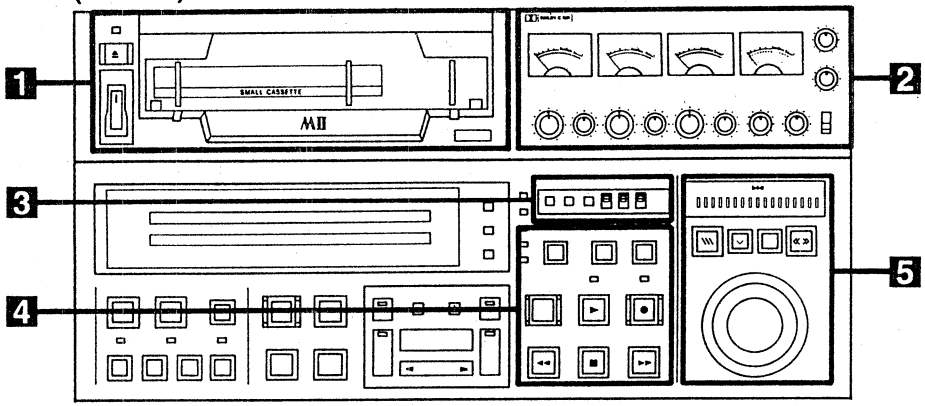
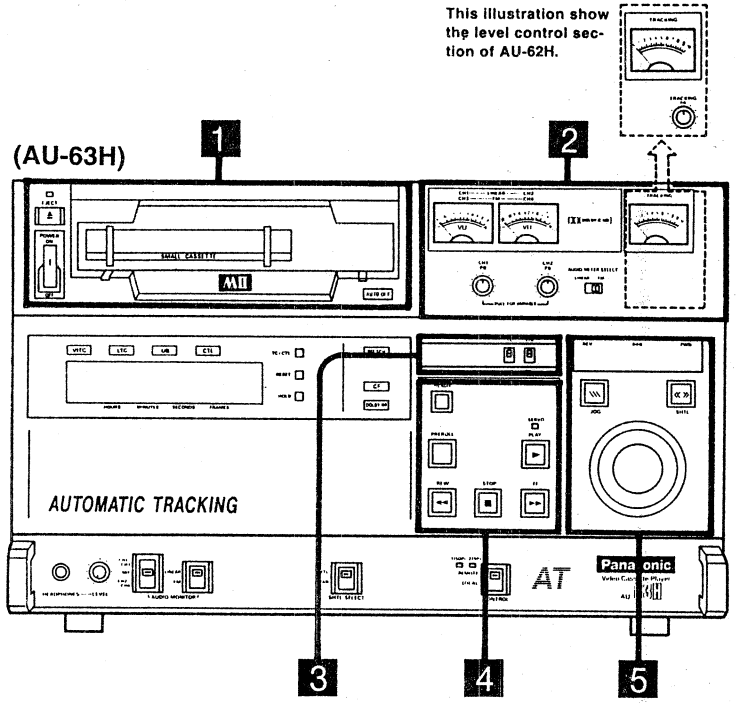
Front Panel

(AU-65H)



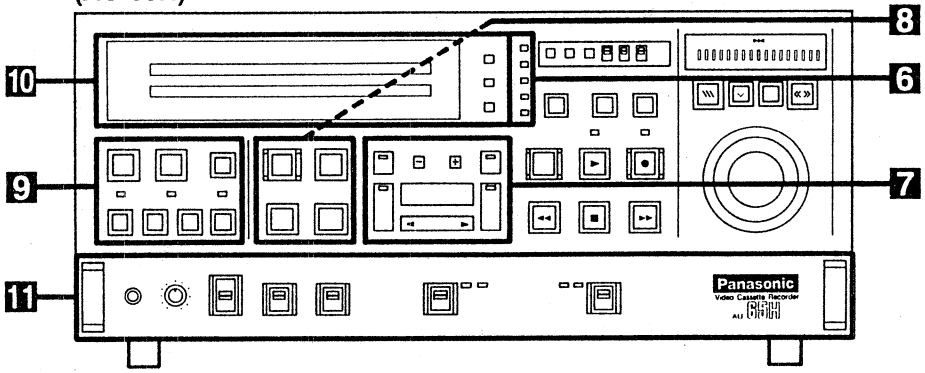
This illustration show the level control section of AU-62H.

(AU-63H)

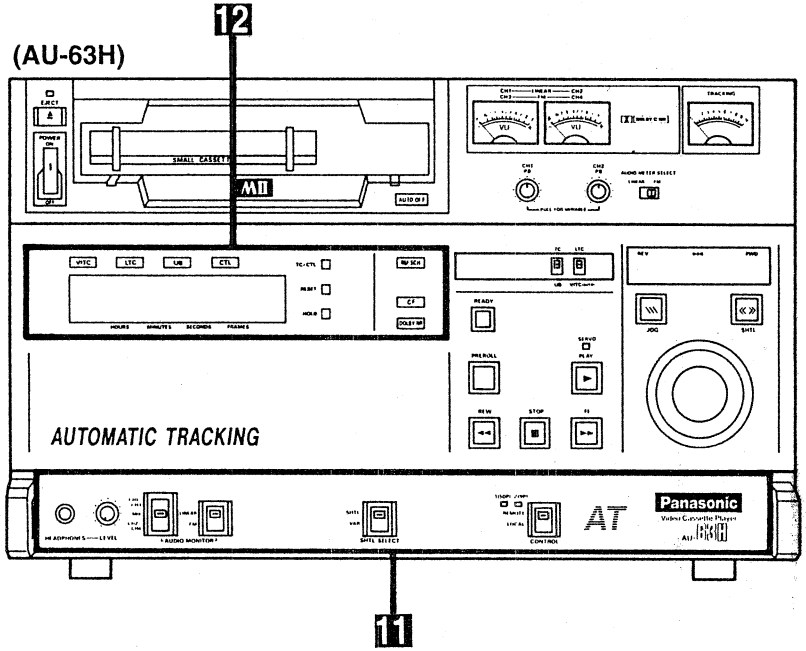


The above illustration shows the AU-63H as seen from the front.

(AU-65H)



(AU-63H)



1 Power, cassette area

POWER Switch: Turns on the mains supply.

EJECT Button: Ejects the tape.

EJECT Lamp: Lights when a tape is ejected.

Cassette Holder: This is where the 1/2-inch metal particle tape is inserted.

AUTO OFF Lamp: This lights when there is something wrong with the unit. While it is lit, only the unit's EJECT button is functional.

Power Supply Protection Function
The unit is equipped with a protection circuit to guard it against excess current or voltage, and against excessively low voltage. If the protection circuit is triggered by some abnormality, the unit's power is turned OFF automatically. Make sure to investigate the cause of the problem, then the unit's operation can be restored to normal again by switching the power ON.

2 Level control area on AU-65H

LINEAR AUDIO CH1/CH2 Meters: Displays the linear audio (CH1/2) level.

FM AUDIO CH3 Meter: Displays the FM audio (CH3) level.

CH4/VIDEO. TRACKING Meter: Displays the FM audio (CH4) level and the video level or the tracking level.

VIDEO Level Control: Adjusts the composite video signal level.

TRACKING Control: Adjusts the tracking.

VIDEO. TRACKING/CH4 Switch: Switches between the VIDEO. TRACKING and CH4 meter indications.

VIDEO TRACKING; Set to this position when adjusting the composition video signal level during recording, or when adjusting the tracking during playback.

CH4; Set to this position when adjusting FM AUDIO CH4.

Audio Level Control: Pull out and turn to adjust the audio level. Push in to record or play back at the optimum level (preset level).

Level control section On AU-63H / 62H

Audio level VU meters: For audio (linear/FM) level display.

AUDIO METER SELECT switch: Selects meter (linear/FM) display.

Audio level controls: Pull out the knobs to adjust the audio level. Then push them back into place for playback at the optimum level (preset level).

TRACKING meter: For tracking display.

***TRACKING control:** Adjusts tracking (AU-62H only).

3 Time code setting area on AU-65H

SHIFT Button: Shifts the flashing part of the time code display.

ADJ Button: This changes the value of the flashing part.

START Button: Press this after completing the time code settings.

INT/EXT Switch: During time code recording, this selects whether the recording is to use the AU-F65 (option) or external time code.

TC/UB Switch: This switches between the time code and user bits display. (It works only when the TC/CTL switch has been set to the TC position.)

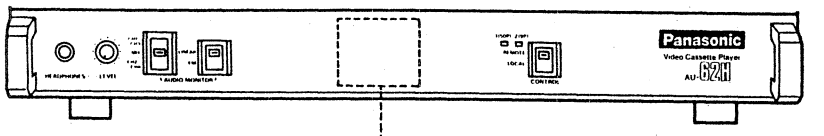
LTC/VITC (AUTO) Switch:

LTC: The LTCR or LUBR value is displayed.

VITC (AUTO): The VITC or VUBR value is displayed.
LTCR is displayed when VITC has not been recorded on tape.
- If the time code cannot be read at either position, interpolation is provided by the CTL signal.

The above illustration shows the AU-63H as seen from the front.

This illustration shows the lower panel of the AU-62H.



The AU-62H is not provided with the SHTL SELECT switch.

Time code control section on AU-63H / 62H

TC/UB switch: Selects the time code or user's bit display. (It is effective only when TC has been selected by the TC/CTL switch.)

LTC/VITC (AUTO) switch:

LTC; Displays the LTCR or LUBR value.

VITC (AUTO); LTC or VITC is automatically switched by the tape speed and displayed when the TC/UB switch is at the TC position. LTCR is displayed when VITC has not been recorded on the tape.
The VUBR value is displayed when the TC/UB switch is at the UB position.

- Interpolation is provided using the CTL signal if it was not possible for the time code to be read regardless of where the switch was set.

4 Basic control area

READY Button: This is the READY mode ON/OFF button.

PLAYER/RECORDER Buttons: (AU-65H only) These are used during operation in the P IN P mode and when the 9-pin connector is used to connect the unit with another VTR for editing purpose.

PLAYER Button; This is pressed when operating the player, which is remote controlled by this unit, while using 2 VTRs for editing.

RECORDER Button; (AU-65H only) This is pressed when operating the recorder (this unit) while using 2 VTRs for editing.

EDIT Button: Editing commences when this is pressed together with the PLAY button.

PLAY Button: To commence Playback mode.

REC Button: (AU-65H only) To commence Record mode when pressed together with the PLAY button.

REW Button: Rewinds the tape at 32 times the normal tape speed.

STOP Button: Shuts down all modes.
A noise-free still picture is obtained when this button is pressed during playback while the MODE switch is set to "TAPE".

FF Button: Fast forwards the tape at 32 times the normal tape speed.

SERVO LOCK Lamp: Lights during servo lock.

REC INHIBIT Lamp: (AU-65H only) Lights in the recording inhibit mode.

5 Search control area

SEARCH Indicator: Indicates the operating status of the search dial.

JOG Button: Press to establish the JOG mode.

VAR Button: (AU-65H only) Press to establish the variable mode.

VAR MEMORY Button: (AU-65H only) Press when conducting a variable memory operation.

SHTL Button: Press to establish the shuttle mode.

6 LED display area

LIMITER Lamp: Lights when the front sub-panel AUDIO LIMITER switch is ON.

DOLBY NR Lamp: Lights when the DOLBY NR switch is ON.

REF SCH Lamp: Lights when SCH of the reference video signal is within ±60° of the standard signal.

INPUT SCH Lamp: Lights when SCH of the LINE IN video signal is within ±70° of the standard signal.

CF Lamp: Lights in the colour framing mode.

7 Editing point entry area on AU-65H

AUDIO IN Button: Use this button to enter, check and correct an AUDIO IN point.

IN Button: Use this button to enter, check and correct an edit IN point.
When pressed in the P IN P double mode, the top right picture freezes at the player's IN entry point.

TRIM +/– Buttons: Use these button to correct an edit point in 1-frame steps.

SET Button: Use this button to enter an edit point.

GO TO Button: Use this button to access an edit point.

AUDIO OUT Button: Use this button to enter, check and correct an AUDIO OUT point.

OUT Button: Use this button to enter, check and correct an edit OUT point.

8 Editing control area on AU-65H

AUTO EDIT Button: Press to execute automatic editing.

PREROLL Button: Press to execute a preroll operation.

PREVIEW Button: Press to execute a preview operation.

REVIEW Button: Press to execute a review operation.

9 Editing mode selection area on AU-65H

ASSEMBLE Button: Press to establish assemble editing mode.

INSERT Button: Press to establish insert editing mode.

REC INHIBIT Lamp: This lights in the record inhibit mode.

Editing Channel Selector Buttons: These select the editing channel.

- **VIDEO/FM:** Video/FM (CH3/4) is selected.
- **AUDIO CH1:** Linear CH1 audio is selected.
- **AUDIO CH2:** Linear CH2 audio is selected.
- **TIME CODE:** Time code is selected.

SPLIT EDIT Button: Press this to establish audio split editing mode.

10 Display area

Display: The tape timer, time code, user bits and error messages appear on this display.

TC/CTL Switch: Selects whether the time code (TC) or control signal (CTL) is to be used in order to read out the tape position.

RESET Button: Resets the CTL value to zero.

HOLD Button: Press to hold whatever is on the display.

11 Bottom panel area

HEADPHONES Jack (6.3 mm): Connect stereo headphones here.

HEADPHONE LEVEL Control: Controls the headphones volume.

AUDIO MONITOR Controls: These select the sound and channel to be monitored.

- **CH1/3:** For CH1 (or CH3) sound monitoring in both the left (L) and right (R) channels.
- **MIX:** Monitors CH1 (or CH3) sound in the left (L) channel and CH2 (or CH4) sound in the right (R) channels.
- **CH2/4:** For CH2 (or CH4) sound monitoring in both the left (L) and right (R) channels.
- **LINEAR:** Monitors linear sound (CH1/2).
- **FM:** Monitors FM sound (CH3/4).

MODE Switch: (AU-65H only) This selects the monitoring picture in the stop or recording mode.

- **TAPE:** Monitors the playback picture.
- **EE:** Monitors the EE picture.

INPUT Switch: (AU-65H only) Selects the input signal.

- **LINE:** Records the composite signal from the LINE IN connector.
- **CMPNT/YC:** Records the signal from the component input connector or YC input connector.

CONTROL Switch:

- **REMOTE:** Selects remote control.
- **LOCAL:** Disables the remote control.

12 Display section

Display: Indicates tape timer, time code, user's bit and error messages, etc.

Time code lamps:

- **VITC;** Lights in VITC mode.
- **LTC;** Lights in LTC mode.
- **UB;** Lights in UB mode.
- **CTL;** Lights in CTL mode.

TC/CTL switch: Selects the time code (TC) or control signal (CTL) for reading out the tape position indicated on the display. It also selects the reference signal during editing.

RESET button: When pressed in the CTL mode, the tape timer indicated on the display is reset to zero.

HOLD button: Press to hold the value now indicated on the display. Press it again to select the time code signal and then return to the previous mode.

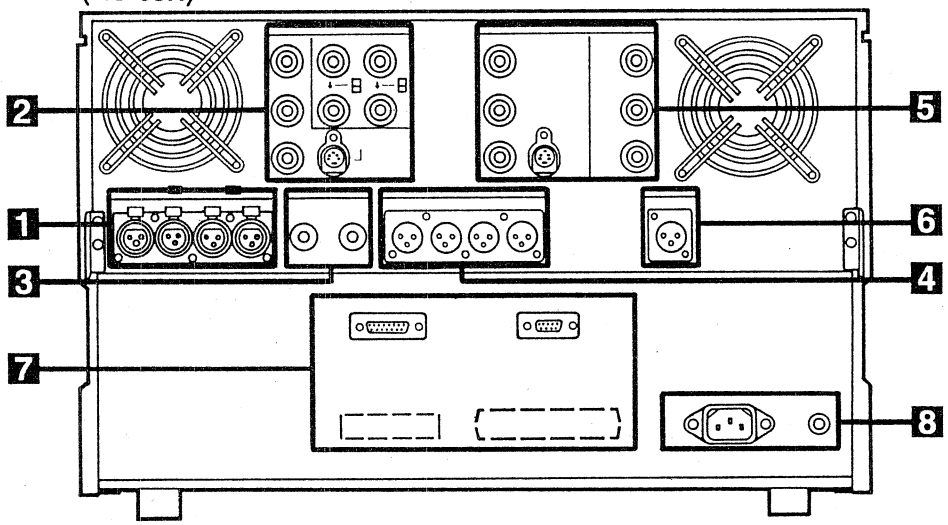
REF SCH lamp: Lights when the reference video signal SCH is ±60°.

CF lamp: Lights in the colour framing mode.

DOLBY NR lamp: Lights when the Dolby NR system is working.

Rear Panel

(AU-65H)



1 AUDIO IN signal area Om Au-65H

CH1-4 IMPEDANCE Switch:	Selects the impedance value of CH1-4.
CH3/4 SELECT Switch:	Selects the signals to be recorded in FM AUDIO CH3/CH4.
LINEAR AUDIO CH1/CH2 Input:	This is the CH1/3 audio input connector.
FM AUDIO CH3/4 Input:	This is the CH2/4 audio input connector.

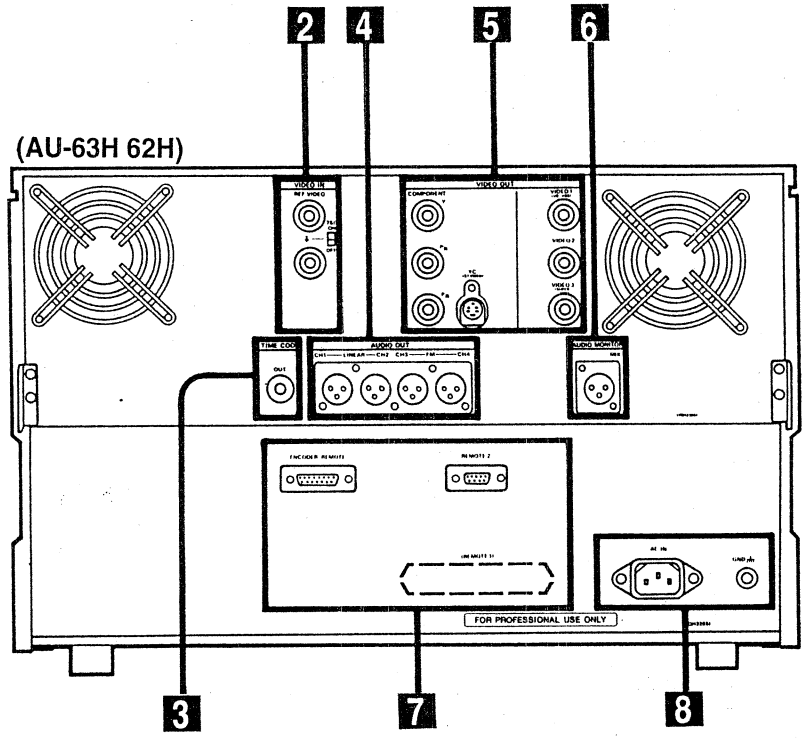
2 VIDEO IN signal area

COMPONENT Connectors: (AU-65H only)	The component signals (Y, PB and PR) are supplied separately to these input connectors.
LINE IN Input Connectors: (AU-65H only)	The composite video signal is supplied to these input connectors (which come with loop-through 75-ohm terminating switch).
YC Input Connector: (AU-65H only)	This is the input connector for the YC signal which correspond to the wide screen.
REF VIDEO IN Connectors:	The reference signal is supplied to these input connectors (which come with loop-through 75-ohm terminating switch).

3 Time code signal area

TIME CODE Input Connector: (AU-65H only)	The time code signal is supplied to this connector.
TIME CODE Output Connector:	The time code signal is output from this connector.

(AU-63H 62H)



4 AUDIO OUT signal area

LINEAR AUDIO CH1/CH2 Output Connectors:	These are the output connectors for CH1 and CH2 audio.
FM AUDIO CH3/CH4 Output Connectors:	These are the output connectors for CH3 and CH4 audio.

5 VIDEO OUT signal area

YC Output Connector:	This is the output connector for the YC signal which correspond to the wide screen.
COMPONENT Output Connectors:	The component signals (Y, PB and PR) are output separately from these connectors.
VIDEO 1 Output Connector:	The video signal with sync (VBS) or without sync—depending on the position selected by the circuit board (W2 encoder board) switch—is output from this connector.
VIDEO 2 Output Connector:	The composite signal is output from this connector.
VIDEO 3 Output Connector:	Depending on the setting of the SUPER switch on the B1.SYSTEM CONTROL board, the VTR operating mode, time code or control signal can be superimposed on this output, besides P IN P mode. There is a delay equivalent to approximately 35ns compared with the VIDEO 1 and VIDEO 2 outputs for an exact phase alignment with that of the reference video signal.

6 AUDIO MONITOR signal area

•L, R or MIX sound is output, depending on the setting of the AUDIO MONITOR switch.

AUDIO MONITOR MIX Output Connector: The L, R and MIX sound is output from this connector.

7 Remote signal area

REMOTE 2 (9P) Connector: RS-422A serial remote connector

REMOTE 1 (50P) Connector: Terminal window for using the optional 50-pin parallel remote connector.
Set the front panel CONTROL switch to "REMOTE" and the front sub-panel REMOTE switch to "1".

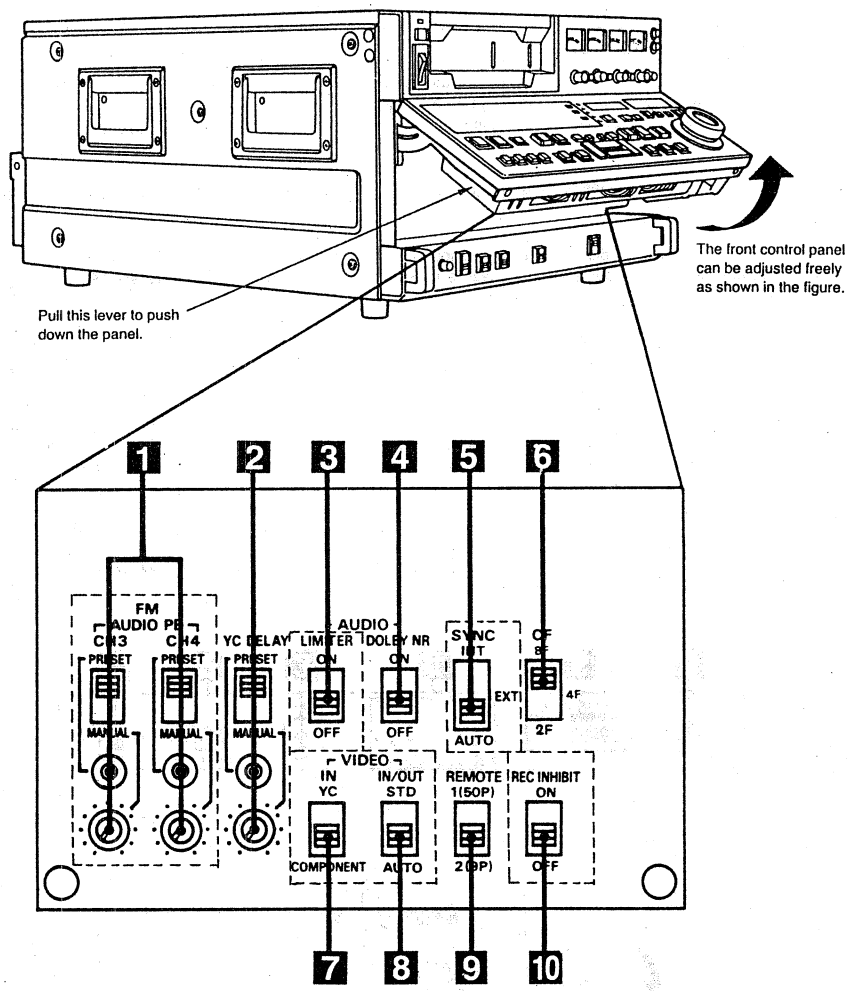
ENCODER REMOTE Connector: This is used for the remote control of the internal encoder from an external device.

8 Power supply area

AC IN Socket: Use the accessory power cord to connect this socket to the power outlet.

GND Terminal: Be sure to connect this to ground when this unit is connected with another device.

Front Sub-Panel



1 **FM AUDIO (CH3 / CH4) PB Switches / Controls : (AU-62H / 63H only)**

PRESET : The playback level of the FM sound is set to the preset status.
MANUAL : The playback level of the FM sound can be adjusted as desired.

2 **YC DELAY Switches/Controls:**

PRESET: YC timing is set to the preset status.
MANUAL: YC timing can be adjusted as desired.

3 **AUDIO LIMITER Switch: (AU-65H only)**

This works for linear audio signals only.
ON: The volume limiter circuit is activated when the input signal level is excessively high.
OFF: The audio signals are recorded at their original level.

4 **DOLBY NR Switch:**

ON/OFF switch for Dolby C Noise Reduction. (This works only for linear audio signals.)

5 **SYNC Switch: (AU-65H only)**

This selects the servo reference signal.
INT: Synchronizes the servo with the internal reference signal during normal playback.
EXT: Synchronizes the servo with the external reference signal.
AUTO: Synchronizes the servo with the video input signal during recording and editing, and with the external reference signal during playback.

6 **CF Switch:**

This selects the colour framing mode during editing and playback.
8F: For recording, playback and editing in 8-field units.
4F: For recording, playback and editing in 4-field units. VISC control is performed.
2F: For recording, playback and editing in 2-field units.

7 **VIDEO IN Switch: (AU-65H only)**

This selects COMPONENT or YC as the video input signal.
YC: For YC signal input.
COMPONENT: For component signal input.

8 **VIDEO IN/OUT Switch: (AU-65H only)**

STD: For supplying a regular composite signal through the time base corrector (TBC).
AUTO: For automatically identifying whether the signal has passed through the TBC or not.

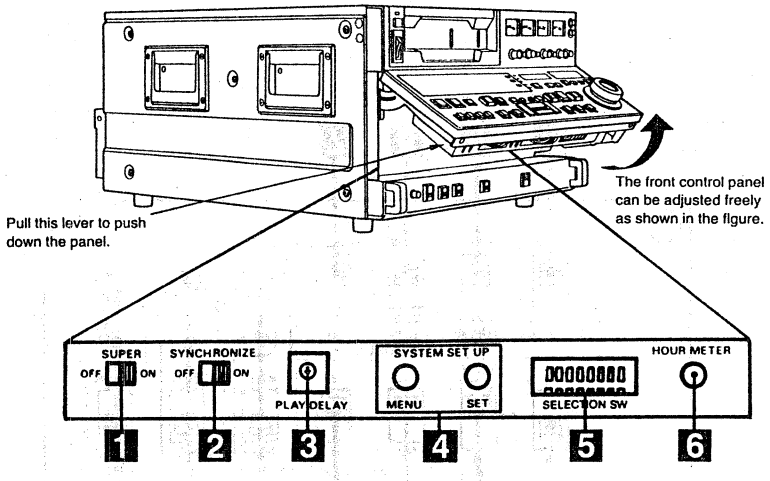
9 **REMOTE Switch:**

1 (50P): When using an optional REMOTE 1 (50P) connector
2 (9P): When using the REMOTE 2 (9P) connector

10 **REC INHIBIT Switch: (AU-65H only)**

ON: The REC INHIBIT lamp lights to indicate that recording is inhibited.
OFF: Signals can be recorded in this position.

B1.SYSTEM CONTROL Board



1 **SUPER Switch:**

This is the ON/OFF switch for P IN P mode and superimposing time code, status or other character signals onto the signal which is output from the VIDEO 3 connector.

2 **SYNCHRONIZE Switch: (AU-65H only)**

When this is set to ON, operation will be synchronized when controlling the player in an editing system where this unit is serving as the recorder.

3 **PLAY DELAY Switch:**

This sets the duration (in frame units) of the transition from the stop mode to the play mode. Any value from 0 to 15 can be set.

4 **SYSTEM SET UP Buttons:**

These are used to change the unit's setup and moving the sub picture position in the P IN P signal mode.

5 **SELECTION SW:**

Not used. (All switches are set to OFF.)

6 **HOUR METER Button:**

When this is pressed, the accumulated values for the "Total power ON time" and "Drum rotation time" appear on the display and on-screen.

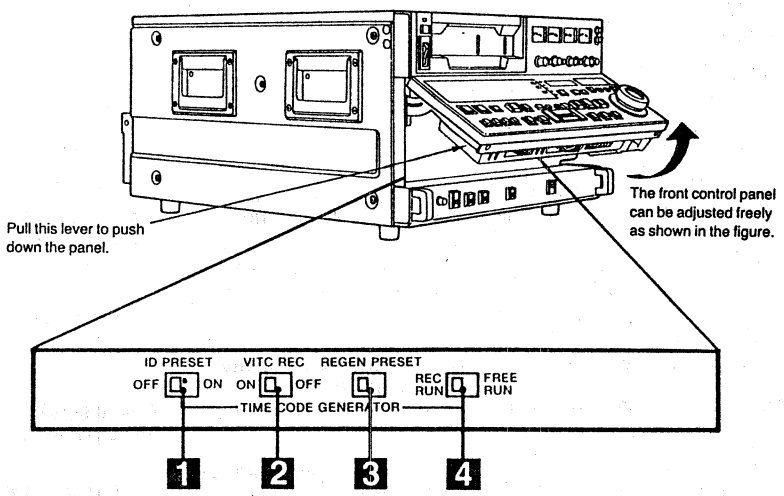
Display indication

P00000H D00000H

On-screen display

POWER	ON	00000 HOURS
DRUM	ON	00000 HOURS

B2.TCG/TCR Board



1 **ID PRESET Switch:**

This switch is used to select the ID code. User bits, such as the VTR No., that are likely to be used frequently can be set in advance as a characteristic code (ID code) for the VTR. This ID code can be called whenever necessary. When the set-up menu item No.6008 "UB REAL TIME" is OFF, the following selection can be made.

ON: When the VTR is in the STOP mode, the ID code can be set. When the VTR is in the recording mode, the ID code is recorded.

OFF: The ID code is not set. Instead, the normal user bit values are set/recorded/displayed.

2 **VITC REC Switch:**

ON: To record the new VITC value onto tape.

OFF: The new VITC value is not recorded.

3 **REGEN/PRESET Switch:**

REGEN: To synchronize the internal time code with the playback time code or external time code.

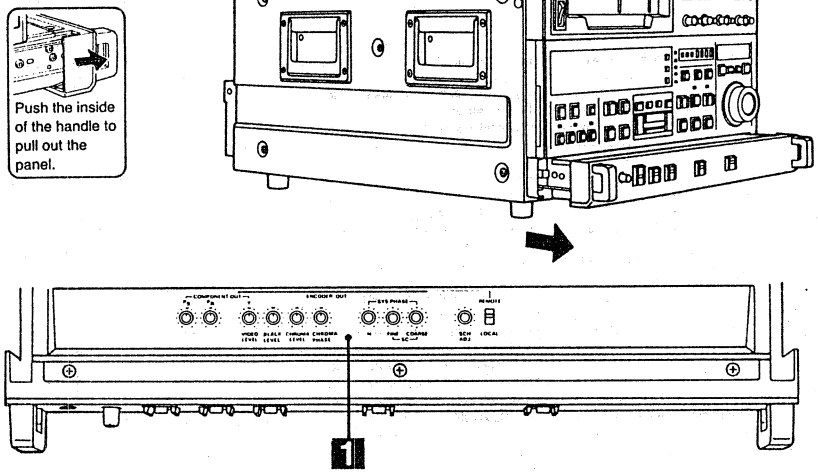
PRESET: To use the internal time code.

4 **REC RUN/FREE RUN Switch:**

REC RUN: The time code runs only during recording.

FREE RUN: The time code runs in real time, regardless of the operating mode of the VTR.

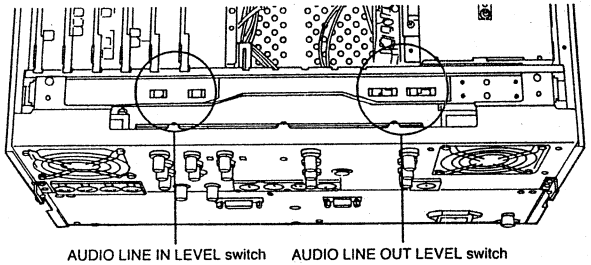
Preset Panel

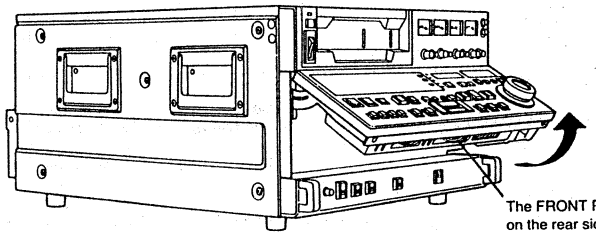


1 ENCODER OUT control area

PB/PR Controls:		Adjust the level of the COMPONENT output signals.
VIDEO LEVEL Control:		Adjusts the level of all the video signals except the sync and burst.
BLACK LEVEL Control:		Adjusts the black level.
CHROMA LEVEL Control:		Adjusts the chroma level.
CHROMA PHASE Control:		Adjusts the chroma phase.
SYS H PHASE Control:		Adjusts the system H phase.
SYS SC Controls:		Adjust the system SC phase.
	FINE:	For continuous adjustment in just over a 90° range; 360° coverage.
	COARSE:	For adjustment in 4 steps of 90° each.
SCH ADJ Control:		This adjusts the SC phase in relation to the sync signal supplied from the VIDEO output connector.
REMOTE/LOCAL Switch:		
	REMOTE:	To adjust the encoder from an external unit.
	LOCAL:	To adjust the encoder using this unit.
	Note:	If the ENCODER REMOTE connector has not been connected on the rear panel, LOCAL mode is selected automatically.

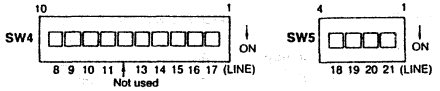
Circuit Boards





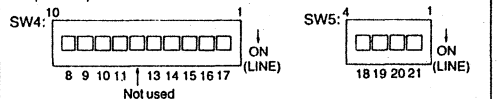
CAUTION: TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, REFER CHANGE OF SWITCH SETTING INSIDE THE UNIT TO AUTHORIZED SERVICE PERSONNEL.

AU-65H onry

PCB	SW No.	Switch	Function	Initial setting
W1 PCB TBC & SYNC GEN	SW4/5/8	V-blanking selector switch	Blanks the video signal during the V-blanking interval (blanking when in ON position).  **SW8:** 7 LINE When the unit is used as a player during editing, if the VITC insert line position on the tape differs from the settings of the editor, set these switches ON to blank the VITC insert line.	ALL OFF
	SW201	Frame detection switch	Detects the video input frame when there is no TBC. ON: Detection takes place. OFF: Detection is inhibited.	ON
	SW203	VIDEO phase switch	Adjusts the video phase.	9
W2 PCB ENCODER	SW201	SYNC ON/OFF switch	Adds the SYNC signal to the VIDEO OUT1 output signal. ON: SYNC signal is added. OFF: SYNC signal is not added.	ON
W3 PCB MOD & DEMOD	SW1	VIDEO/SYNC meter switch	Selects VIDEO meter.	VIDEO
AUDIO I/O PCB	SW101*/ 301*	AUDIO LINE IN LEVEL switch	Sets the CH1/2 (SW101) or CH3/4 (SW301) audio input level. −20/0/+4 dBu	0 dBu
	SW102/ 302	AUDIO LINE OUT LEVEL switch	Sets the CH1/2 (SW102) or CH3/4 (SW302) audio output level. −20/0/+4 dBu	0 dBu
FRONT PANEL	SW1	Preroll time switch	This selects the preroll time to any value from 0 to 15 secods.	5 sec.
	SW2-1	Not use	———	OFF
	SW2-2	NEGATIVE display switch	This selects whether "NEGATIVE" is to be indicated on the display when the IN point is equal to, or less than, the OUT point during edit point entry. ON: "NEGATIVE" appears in block 2. OFF: "NEGATIVE" does not appear.	OFF
	SW4-1	Remaining tape display switch	This selects whether the remaining tape is to be indicated on the display. ON: Displayed when block 3 is empty. OFF: Displayed all the time.	OFF
	SW4-2	TSO switch	Selects TSO in accordance with the connected machine. ON: TSO for AU-650, AU-620 only. OFF: TSO for AU-750, AU-650B, AU-65, AU-630, AU-640 only (This can be changed in 1% steps up to ±15%).	OFF
	SW4-3~ 4-6	Not used	———	OFF
	SW4-7	Forced EE selector switch	This selects the forced EE mode during tape eject. ON: EE mode is set all the time regardless of the MODE switch position. OFF: Mode corresponds to MODE switch setting.	OFF

*At the time of shipping from the factory, this unit is adjusted so that the audio level meter indicates −4 dB with input of a 1 kHz standard signal.

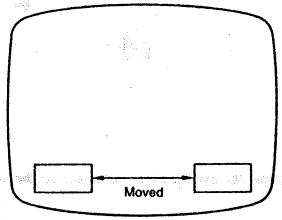
AU-63H / 62H only

PCB	SW no.	Name	Function	Initial setting
W1 PCB: TBC & SYNC GEN	SW4	V-blanking selector switch	Blanks the video signal during the V-blanking interval (blanking when in ON position).  SW8: 7 LINE When the unit is used as a player during editing, if the VITC insert line position on the tape differs from the settings of the editor, set these switches to the ON position to blank the VITC insert line.	ALL OFF
	SW203	VIDEO phase switch	This adjusts the video phase.	9
W2 PCB: ENCODER	SW201	SYNC ON/OFF switch	The SYNC signal is added to the VIDEO OUT 1 output signal. ON: SYNC signal is added. OFF: SYNC signal is not added.	ON
W3 PCB: DEMOD	SW1	VIDEO/SYNC meter switch	Selects the video meter mode.	VIDEO
W6 PCB: AUDIO I/O	SW102	AUDIO LINE OUT LEVEL switch	This sets the CH1/2 AUDIO output level (+4/0/−20 dBu).	0 dBu
	SW302	AUDIO LINE OUT LEVEL switch	This sets the CH3/4 AUDIO output level (+4/0/−20 dBu).	0 dBu
FRONT PANEL PCB	SW1	Preroll time switch	SW1 selects the preroll time.	5 sec.
	SW2-1	Remaining tape display switch	Selects whether the remaining time is to be indicated on the display. ON: Display OFF: No display	OFF
	SW2-2	———	———	OFF
	SW2-3	TSO switch	Select the tape speed override (TSO) according to the machine connected. ON: TSO for AU-650, AU-620 only OFF: TSO for AU-60, AU-65, AU-65H, AU-640, AU-660 only TSO can be varied in 1% increments up to ±15%.	OFF

Item		Set-up value		Description on function
No.	Superimpose display	No.	Superimpose display	
1013	FREEZE SELECT	00 01	OFF ON	Noise-free still pictures are played back. 00: The picture is not frozen. 01: The picture is frozen when the mode is transferred from playback to stop.
1014 AU-65H only	WIDE INPUT SELECT	00 01	AUTO WIDE	Selects whether to record wide size video information contained in the YC input signals. 00: The wide size is automatically identified by the wide size information in the YC input signals, and it is recorded. 01: The wide size information is recorded regardless of the input.
1015	WIDE OUTPUT SELECT	00 01 02	AUTO NORMAL WIDE	Selects whether to place the wide size information on the YC output signals. 00: The wide size information is automatically placed on the YC output signals by the wide size information on the tape. 01: The wide size information is not placed on the YC output signals. 02: The wide size information is placed on the YC output signals.

Superimpose set-up items

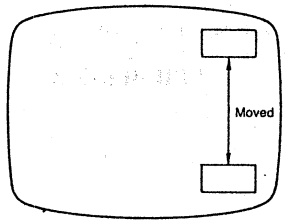
[The shading denotes the initial setting.]

Item		Set-up value		Description of function
No.	Superimpose display	No.	Superimpose display	
2001	CHARACTER BACKGROUND	00 01	Selection is made while observing superimposed display.	Selects the type of characters for the VIDEO 3 superimpose display. 00: Black display 01: Edge display LTCR **:**:**:**. LTCR **:**:**:**
2002	CHARACTER H-POSITION	00 01 02 03 04 05 06 07	Selection is made while observing superimposed display.	Selects horizontal position for VIDEO 3 superimpose display; moves characters towards right as NO. is increased. 

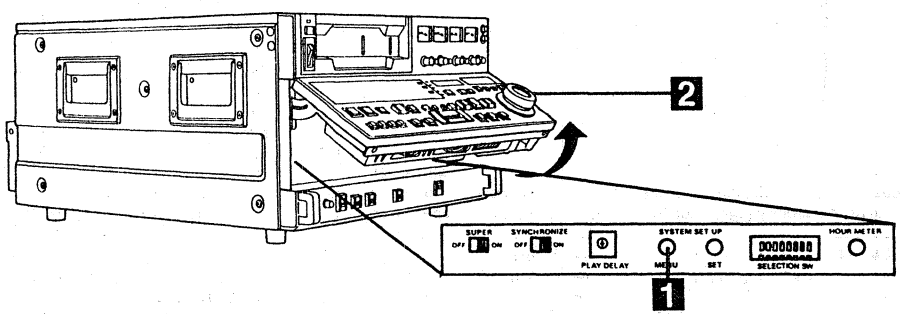
Set-up Menus (cont.)

Superimpose set-up items (cont.)

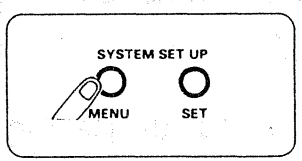
[The shading denotes the initial setting.]

Item		Set-up value		Description of function
No.	Superimpose display	No.	Superimpose display	
2003	CHARACTER V-POSITION	00 01 02 03 04 05 06 07	Selection is made while observing superimposed display.	Selects vertical position for VIDEO 3 superimpose display; moves characters down as NO. is increased. 
2004	STATUS SUPER	00 01	OFF ON	Selects whether VTR operation mode is to be indicated as a superimposed display of VIDEO 3 output signal.
2005 AU-65H only	VIDEO OUT 3 SELECT	00 01 02	SUPER P IN P P IN P + SUPER	When the SUPER switch on the B1. SYSTEM CONTROL board is ON, either the superimpose display at VIDEO OUT 3 or P IN P output is selected. 00: Only superimpose is displayed. 01: Only P IN P is output. 02: Both are output.
2006 AU-65H only	P IN P MODE SELECT	00 01	SINGLE DOUBLE	Selects the P IN P mode. 00: The player VTR's picture is output at the top right of the screen as the sub picture. 01: The player VTR's picture is output both at the top right and top left of the screen.

Operation Method of Dial Menu Functions



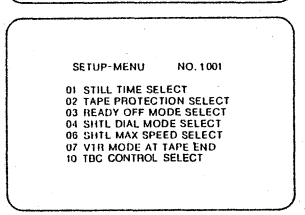
1 Press the MENU button on the B1. SYSTEM CONTROL board.



The picture below appears on the monitor.
(If changes were made previously to the set-up, the screen will show the last such change.)

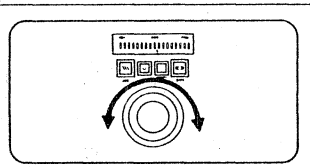
Display

SETUP—MENU
NO. 1001

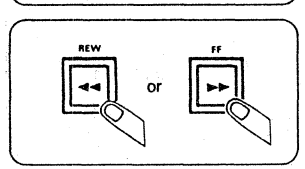

SETUP-MENU NO. 1001
01 STILL TIME SELECT
02 TAPE PROTECTION SELECT
03 READY OFF MODE SELECT
04 SHTL DIAL MODE SELECT
06 SHTL MAX SPEED SELECT
07 VTR MODE AT TAPE END
10 TBC CONTROL SELECT

Superimpose display

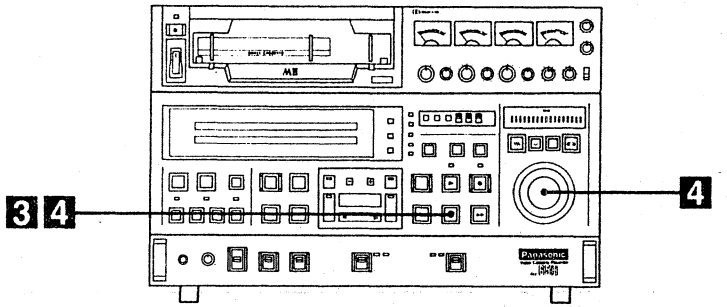
2 Turn the search dial and find the setting item.



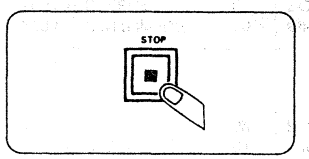
When the dial is rotated clockwise, the setting items are successively incremented (1001→1002→1003, etc.); conversely, when it is rotated counterclockwise, they are decremented.

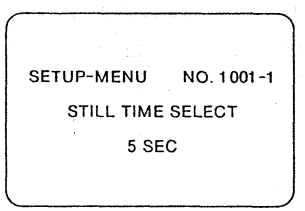


Press the FF (page up) or REW (pack down) button to change the set-up menu in page units.
The set-up menu changes page by page.



3 Press the STOP button at the desired item.





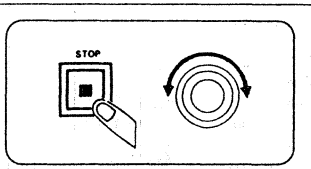
Superimpose display

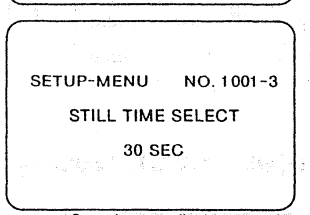
The set-up display, such as that below, will appear on the screen for as long as the STOP button is held down.

Display

SETUP—MENU
NO. 1001—1

4 Turn the search dial while holding down the STOP button.



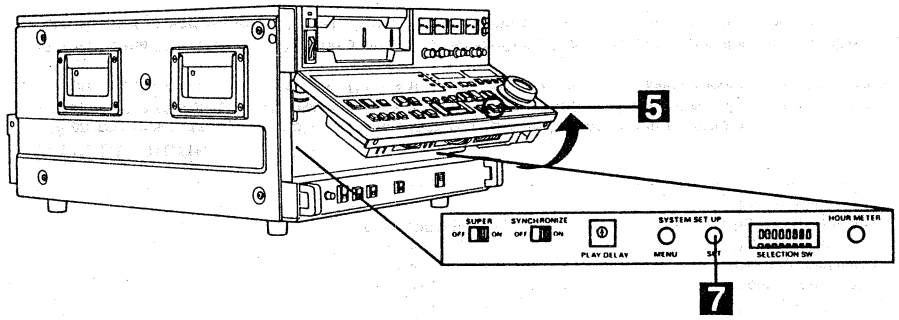


Superimpose display

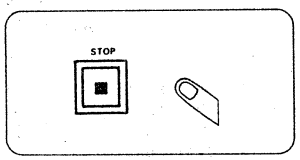
The flashing display changes. Set to the desired value.

Display

SETUP—MENU
NO. 1001—3



5 Release the STOP button.

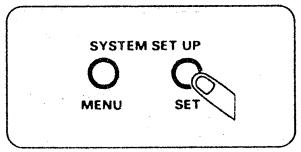


The set-up menu display returns to the screen.

6 Repeat steps 3 to 5.

Set all the set-up items to be changed to the desired values.

7 Press the SEET button on the B1. SYSTEM CONTROL board.



Upon completion of the setting, press the SET button on the B1. SYSTEM CONTROL board.
The set-up changes are stored in the memory.

REFERENCE

- **To terminate operation in the mode without storing the settings in the memory:**
  Press the MENU button on the B1. SYSTEM CONTROL board.
- **To return the set-up to the initial settings (set at the factory):**
  Press the RESET button while the set-up menu is displayed. The following message will now appear.

```
SETUP-MENU    INIT. SET OK?
              (PUSH PLAY KEY)
```

The original settings are restored when the PLAY button is pressed.

Set-up Menus

Operation/function set-up items

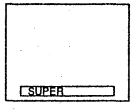
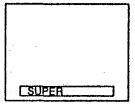
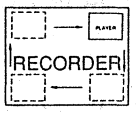
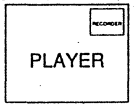
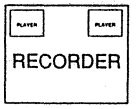
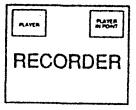
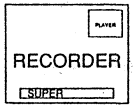
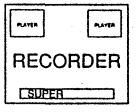
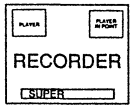
[The shading denotes the initial setting.]

Item		Set-up value		Description of function
No.	Superimpose display	No.	Superimpose display	Description of function
1001	STILL TIME SELECT	00 01 02 03 04 05 06 07	0.5 SEC 5 SEC 10 SEC 30 SEC 1 MIN 3 MIN 5 MIN 10 MIN	When the unit is left in the STOP or STILL mode, this selects the duration of time after which the unit is automatically placed in the TAPE PROTECTION mode in order to protect the tape.
1002	TAPE PROTECTION SEL	00 01	T. RELEASE READY OFF	This selects the operation in the tape protection mode. 00 : Tape tension release 01 : Ready OFF mode (in conformity with No. 1003)
1003	READY OFF MODE SELECT	00 01 02	DRUM ROTATE DRUM STOP UNLOADING	Selects the operation in the READY OFF mode. 00 : Drum rotates. 01 : Drum stops rotating. 02 : Unloading.
1004 AU-65H /63H only	SHTL DIAL MODE SELECT	00 01	DIRECT SHTL PRESET VAR	Selects the operation mode for the dial in any mode except shuttle. 00 : Direct shuttle mode 01 : Preset variable mode.
1004 AU-62H only	SHTL DIAL MODE SELECT	00 01	DIRECT SHTL NON DIRECT SHTL	Selects the dial oepration mode (not in the SHTL mode). 00 : Direct shuttle mode 01 : Normal
1005 AU-63H only	VAR/P-PLAY SELECT	00 01	VAR P-PLAY	00 : Variable mode 01 : Program playback mode
1006	SHTL MAX SPEED SELECT	00 01	*32 *16	Selects the maximum search speed in the shuttle mode. 00 : 32x normal tape speed 01 : 16x normal tape speed
1007	VTR MODE AT TAPE END	00 01	STOP AUTO REW	Selects the operation after the tape-end has been detected. 00 : Stop 01 : Automatic rewinding to start
1010	TBC CONTROL SELECT	00 01	V-FLOAT NON V-FLOAT	Used to float the internal SYNC to enable H to be aligned with the reference signal and V to be aligned with the input signal. 00 : Floating 01 : Not floating
1011	STD/NON-STD SELECT	00 01	FRONT SWITCH NON-STD	Selects whether to forcibly establish the NSTD mode regardless of the position of the VIDEO IN/OUT switch on the front sub-panel. 00 : As per position set by VIDEO IN/OUT switch. 01 : NSTD mode is forcibly established.
1012	VISC CONTROL SELECT	00 01	CONTROLLED NOT CONTROLLED	This uses VISC to align the subcarrier phase of the input video signal and the subcarrier phase of the encoder video output signal. (It is effective only during normal playback with CF SW 4F or 8F.) 00 : VISC control 01 : No VISC control

P IN P Function on AU-65H

This function uses a main picture and sub picture to enable playback signals and input signals to be displayed on the same monitor screen. In the single mode, the main picture and sub picture can be switched, and the linear sound of the main picture is output from MONITOR OUT.
When used in the double mode, the player's IN points can be checked during automatic editing operations using two recorders.

Monitor screen displays

Superimposing modes (video output 3)	P IN P mode			
	SINGLE mode (main/sub picture switching possible)		DOUBLE mode (main/sub picture switching impossible)	
SUPER (superimposing only)				
P IN P (P IN P mode only)	 Picture is moved by SYSTEM SET UP button on B1. SYSTEM CONTROL board.	 The main picture is replaced by the sub picture and vice versa when the PLAYER/ RECORDER button is pressed.		 The top right sub picture freezes at the IN entry point when the IN and SET buttons are pressed at the same time.
P IN P + SUPER (superimposing and P IN P mode)		The main picture is replaced by the sub picture and vice versa when the PLAYER/ RECORDER button is pressed.		 The top right sub picture freezes at the IN entry point when the IN and SET buttons are pressed at the same time.

SINGLE mode

- When the power is turned on, the player's picture is monitored at the top right as the sub picture.
- While the PLAYER button is depressed or while the PLAYER lamp has lighted, the player's picture serves as the main picture to replace the recorder's picture. The linear sound is also switched to the player's sound. (The FM sound is not switched.)
- Each time the SYSTEM SET UP button on the B1. SYSTEM CONTROL board is pressed, the display position of the sub picture is moved. (However, the sub picture cannot be moved while the menu screen is displayed.)

DOUBLE mode

- When the power is turned on, the player's picture is monitored at the top right and top left as sub pictures.
- When the player's IN point is entered (by pressing the IN and SET buttons simultaneously), the sub picture at the top right freezes. When the IN point is reset, it is released.

Set-up menus (cont.)

Remote set-up items

[The shading denotes the initial setting.]

Item		Set-up value		Description of function
No.	Superimpose display	No.	Superimpose display	
3001	REMOTE OPERATION SEL	00	SEPARATE	Selects connector which can be controlled when REMOTE switch is at REMOTE position. 00: Selected by CONTROL switch 01: Control panel and connector selected 02: REMOTE 1 and REMOTE 2 03: All operations possible
		01	LOCAL+REMOTE	
		02	BOTH REMOTE	
		03	ALL OPERATION	
3002	EJECT/STOP FNCTN REM.	00	POSSIBLE	Selects operation of panel EJECT/STOP button in remote mode. 00: Enables operation. 01: Disables operation.
		01	NOT POSSIBLE	
3003	50P STOP STATUS SEL	00	FLASHING	Selects whether or not to indicate by flashing the STOP status signal which is supplied to 50-pin remote connector in READY-OFF mode. 00: Flashing 01: Not flashing
		01	NOT FLASHING	
3004	9P DEVICE TYPE SELECT	00	OTHER TYPEs 1	Selects ID code returned in response to 9P device type request command when control is exercised using 9-pin remote connector. 00 : 1100 (BVU-800) 02 : A111 (AU-62H) 01 : 2125 (BVW-75) 02 : A112 (AU-63H) 02 : A110 (AU-65H)
		01	OTHER TYPEs 2	
		02	M2 ID	
3005	VTR AD-DRESS	00	A (8880)	Sets identification number of each VTR when VTRs are connected to a multi-drop system through an RS-422 (9-pin) serial bus under the control of a special controller. This setting is effective starting from the time when the power is next switched ON.
		01	B (8882)	
		02	C (8884)	
		03	D (8886)	
		04	E (8888)	
		05	F (888A)	
		06	G (888C)	
		07	H (888E)	
		08	I (88C0)	
		09	J (88C2)	
		10	K (88C4)	
		11	L (88C6)	
		12	M (88C8)	
		13	N(88CA)	
		14	O (88CC)	
		15	P (88CE)	

Editing set-up items

[The shading denotes the initial setting.]

Item		Set-up value		Description of function
No.	Superimpose display	No.	Superimpose display	
4001 AU-65H only	CF ADJUSTMENT SELECT	00	TO PLAYER	Selects the VTR which is to adjust the entered points for VTR-to-VTR editing. (0 to +3 frame) 00: The points on the player tape are adjusted. 01: The points on the recorder tape are adjusted.
		01	TO RECORDER	
4002 AU-65H only	EDIT FIELD SELECT	00	ODD	Selects the start field for editing. 00: Start with odd number field 01: Start with even number field
		01	EVEN	
4003 AU-65H only	AUTO PREROLL ENTRY	00	NOT ENTERED	Selects whether to enter the IN point by pressing the pre-roll button when the IN point has not been entered. 00: Entered 01: Not entered
		01	ENTERED	

Colour framing set-up items

[The shading denotes the initial setting.]

Item		Set-up value		Description of function
No.	Superimpose display	No.	Superimpose display	
5004	CF SELECT AT Pb OUT	00	AUTO	Selects whether to add the colour framing ID to the COMPONENT Pb OUT connetor signal. 00: Forcibly added when the composite video input signal is recorded in the normal recording or assemble editing mode. Added when CF lamp lights in the playback mode. 02: Added
		02	ON	

Set-up menus (cont.)

Time code set-up items

[The shading denotes the initial setting.]

Item		Set-up value		Description of function
No.	Superimpose display	No.	Superimpose display	
6001 AU-65H only	VITC POSITION SEL-1	00	8 LINE	Selects VITC signal insertion line. *Same line as No.6002 cannot be selected.
		01	9 LINE	
		02	10 LINE	
		03	11 LINE	
		04	13 LINE	
		05	14 LINE	
		06	15 LINE	
		07	16 LINE	
		08	17 LINE	
		09	18 LINE	
		10	19 LINE	
		11	20 LINE	
		12	21 LINE	
6002 AU-65H only	VITC POSITION SEL-2	00	8 LINE	Selects VITC signal insertion line. *Same line as No.6001 cannot be selected.
		01	9 LINE	
		02	10 LINE	
		03	11 LINE	
		04	13 LINE	
		05	14 LINE	
		06	15 LINE	
		07	16 LINE	
		08	17 LINE	
		09	18 LINE	
		10	19 LINE	
		11	20 LINE	
		12	21 LINE	
6003 AU-65H only	TCG REGEN MODE	00	TC+UB	Selects regeneration signal when TCG is in REGEN mode. 00: Regenerated for time code and user bits. 01: Regenerated for time code only. 02: Regenerated for user bits only.
		01	TC	
		02	UB	
6004 AU-65H only	REGEN AUTO MODE	00	ASSEM+INSERT	Selects whether time code is to be regenerated in VTR-to-VTR editing. 00: Regenerated for assemble and insert editing. 01: Regenerated for assemble editing. 02: Regenerated for insert editing. 03: Conforms to time code board setting.
		01	ASSEM	
		02	INSERT	
		03	TC SWITCH	
6005 AU-65H only	TCG REFERENCE	00	AUTO	Selects reference signal for time code generator. 00: Automatically selected under same condition as servo reference 01: Reference video signal serves as reference.
		01	REF	

Time code set-up items

[The shading denotes the initial setting.]

Item		Set-up value		Description of function
No.	Superimpose display	No.	Superimpose display	
6006	TC OUT SIGNAL REGEN	00	OFF TAPE	Selects waveform which is output from TIME CODE OUT connector in internal regeneration mode. 00: Outputs playback signals in their original form. 01: Regenerates and outputs playback signals only in servo lock mode.
		01	REGEN	
6007 AU-65H only	UB BINARY GROUP FLAG	00	NOT SPECIFIED	Selects mode for using user bits generated by TCG. 00: No character set assigned. 01: 8-bit character set conforming to ISO646, ISO2022. 02/03: Not defined
		01	ISO CHARAC-TER	
		02	UNASSIGNED 1	
		03	UNASSIGNED 2	
6008 AU-65H only	UB REAL TIME	00	OFF	Sets the real time mode for the user bits. 00: No setting 01: Setting for LTC UB only 02: Setting for VITC UB only 03: Setting for both LTC UB and VITC UB
		01	LTC UB	
		02	VITC UB	
		03	BOTH	
6009	WAKEUP SELECTION	00	TC	Selects the time data display when power is ON. 00: TC display 01: CTL display
		01	CTL	
6010	TCG CF FLAG	00	OFF	Selects whether CF flag of time code generator is to be set ON. 00: CF flag not set 01: CF flag is set, and time code generator is locked to CF of video signal during recording.
		01	ON	

Error Messages on AU-65H

Display	Description	VTR operation
SERVO NOT LOCKED	Flashes during the PLAY, REC PLAY or EDIT PLAY mode when the servo system has been disengaged for 3 or more seconds.	Continues operation
LOW-RF	Flashes when a dropout has been detected for 2 or more seconds while the PLAY lamp is ON and the tape is traveling at 1× speed.	Continues operation
DRUM MOTOR	Alarm sounds and message flashes when drum lock status continues for 5 or more seconds.	Stops
REEL MOTOR	Alarm sounds and message flashes when, in capstan mode, take-up reel does not rotate while the tape is advanced by about 10 cm.	Stops
FRONT LOAD MOTOR	VTR mode is transferred to eject if cassette does not assume "down" position even when 5 seconds have elapsed after cassette was inserted.	Ejects cassette
	Alarm sounds and message flashes when cassette does not assume "up" position when VTR is transferred to eject mode and 5 seconds have elapsed after cassette was inserted.	Stops
LOADING MOTOR	VTR mode is transferred to unloading when loading operation is not completed within 10 seconds.	Unloads tape
	Alarm sounds and message flashes when unloading operation is not completed within 10 seconds.	Stops
PHOTO TRANSISTOR	Alarm sounds and message flashes when sensor LED has failed.	Stops
DEW	Alarm sounds and message flashes when condensation has formed.	* Ejects tape
TAPE SLACK	Alarm sounds and message flashes when tape is slack.	Stops
REEL DRIVE ERROR	Alarm sounds and message flashes when actual tape advance direction differs from system control command by 5 or more seconds.	Stops
DC ○○ V TROUBLE	Alarm sounds and message flashes when there is something wrong with the power supply or related parts.	Stops
FAN STOP	Alarm sounds and message flashes when fan inside power supply box stops operating.	Continues operation
FG TROUBLE	Alarm sounds and message flashes when there is something wrong with reel travel during high-speed search.	Stops
NEGATIVE	Flashes when front panel DIP SW2-2 is ON if IN point is equal to or greater than OUT point during edit point entry.	——

*When condensation has formed, the drum continues to rotate so that the condensation will dry out. Once it has been removed, the AUTO OFF lamp and error display go off, and the VTR can be used again.

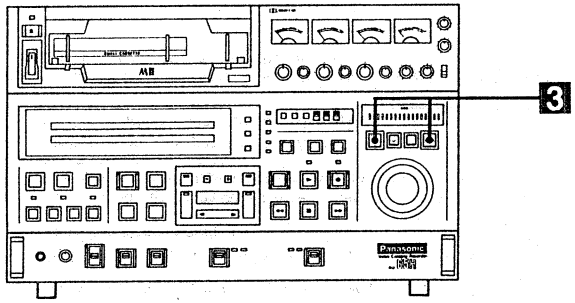
Error messages on AU-63H / 62H

Contact your authorized dealer if any of the error messages listed below should appear on the display.

Display	Description	VTR operation
E-00	Display flashes during playback when servo disturbances continue for 3 or more seconds.	Operation continues.
E-01	Display flashes when dropouts have been detected for more than 2 sec. during 1× tape speed while PLAY lamp is lighted.	Operation continues.
E-10	Alarm sounds and display flashes when drum lock continues for 5 or more sec.	Operation stops.
E-11	Alarm sounds and display flashes when take-up reel does not rotate while tape is fed for about 10 cm.	Operation stops.
E-14	Alarm sounds and display flashes when cassette is not lowered into position even when 5 seconds have elapsed after the cassette was inserted.	Tape is ejected.
	Alarm sounds and display flashes when cassette is not raised and ejected even when the eject mode is established and 5 seconds have elapsed.	Operation stops.
E-15	Alarm sounds and display flashes when loading is not completed within 10 sec.	Tape is ejected.
	Alarm sounds and display flashes when unloading is not completed within 10 sec.	Operation stops.
E-16	Alarm sounds and display flashes when sensor LED is disconnected.	Operation stops.
E-17	Alarm sounds and display flashes when condensation has formed.	(*)Tape is ejected.
E-18	Alarm sounds and display flashes when tape is slack.	Operation stops.
E-19	Alarm sounds and display flashes when the system control instruction and actual tape feed direction differ for more than 5 sec.	Operation stops.
E-1C E-21 ~ E-26	Alarm sounds and display flashes when a failure or malfunction arises in the power supply section.	Operation stops.
E-1F	Alarm sounds and display flashes when the fan inside the power supply box stops operating.	Operation continues.
E-20	Alarm sounds and display flashes when a failure or malfunction occurs to the reel transport during high-speed search.	Operation stops

When condensation has formed, the drum rotates in order to remove the condensation.
When the condensation is removed, the AUTO OFF lamp goes off, the error display is cleared, and the VTR can be operated again.

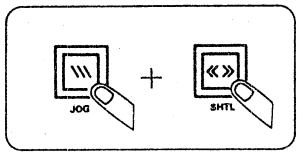
Head Cleaning



1 Set the VTR to the stop mode.

2 Remove the cassette tape.

3 Press the JOG and SHTL buttons together.



The loading post moves in order to facilitate head cleaning.

4 Proceed with head cleaning.

Handle the parts with the utmost care. For further details, contact your dealer.

5 Upon completion of the work, perform one of the following operations.

1) **Set the POWER switch to OFF and then back to ON.**
2) **Press the EJECT button.**
3) **Insert a cassette tape.**

6 This completes the head cleaning process.

Handling Precautions

Handling precautions

Vibration: Avoid using the unit in a location susceptible to vibration.

Magnetism: Do not bring the unit near a magnet.

Temperature: Avoid using the unit in extremely hot or cold areas or in direct sunlight. Failure to do so may cause its performance to deteriorate.
- Operating temperature: +5°C to +40°C

(Under no circumstances must the fan area at the back of the ventilation hole section be blocked or covered since the fan serves to safeguard against inside temperature rises.)

Humidity: This unit is particularly vulnerable to humidity and moisture. Avoid locations where the humidity is high or where the unit may be exposed to rain.

Transportation: Remove the cassette tape from the unit when transporting it from place to place.
When disconnecting the power cord from the power outlet, remember to take hold of the power plug (and not the cord itself).

Installation

Take the operating environment and installation space into account. Adherence to the points below will ensure that full justice will be done to the unit's excellent quality, and operating and servicing ease.
- Use the unit on a flat and even surface.
- Do not place objects on top of the unit.
- If the unit is to be used on a stand, make sure that the stand is strong and sturdy.
- To facilitate ventilation and servicing, leave clearances of at least 40 cm behind the unit from a wall or other surface.
- If the unit is to be used on a desk or other such surface, leave a clearance of at least 20 cm above it in order to facilitate the servicing of the circuit board. There is no need to leave any clearances when mounting the unit in a rack since the unit is pulled out when its circuit boards are to be maintained.

Maintenance

Before proceeding with maintenance, set the power switch to OFF and take hold of the power plug to disconnect it from the power outlet.
Use a soft cloth to clean the cabinet. With stubborn stains or dirt, use a mild detergent solution, allow a cloth to soak in it, and then wring it out and clean. After having removed the stains or dirt, use a dry cloth to wipe away any moisture.
Do not use paint thinners or benzine.

Storage

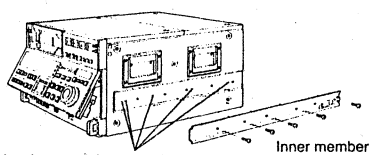
- Avoid storing the unit in a location characterized by extremely high or low temperatures.
- Under no circumstances should the unit be left outdoors.
- If there are no plans to use the unit for a prolonged period, set the power switch to OFF and, remembering to take hold of the power plug, disconnect it from the power outlet. This is done to safeguard against accidents and break downs.
- Before storing, always remember to remove the cassette tape if one is still inside the unit.

Rack Mounting

Using the optional AU-M60 rack-mounting adaptors, the unit can be housed in a standard IEC 48.2 cm rack. For the mounting rails, either the rails and bracket unit (part no. CC3001-99-0191) made by Chassis Trak or the rails (part no. C-2038-1215) and brackets (part no. BK-2308) made by Accuride are recommended. Consult with your dealer for further details.

1 Remove the 6 screws each at the left and right sides of the main unit.

2 Attach the inner members



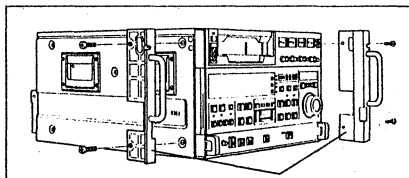
Attach the inner members of the slide rails using the screws which have just been removed.
There is a limit to the length of the screws used. If any of the mounting screws have been lost or misplaced, use screws (M4x10) with a length of not more than 10 mm.
Screw down the inner members in 4 or more places.

3 Remove the 4 rubber feet on the unit's bottom panel.

4 Attach the outer member brackets to the rack.

Check that the height at the left and right is the same.

5 Attach the optional AU-M60 rack-mounting adaptors.



6 Check that the unit slides properly in and out.

Mount the unit in the rack, and check that it slides smoothly on the rails.

Note :

INNER SWITCH SETTING (INITIAL MODE)

Circuit Board	Ref. No.	NAME	Shipment Mode			
			NTSC		PAL	
			AU-65H	AU-63H/62H	AU-65H	AU-63H/62H
W1	SW1	COMB				
	SW6	CNC				
	SW7	15LP	ON	ON	ON	ON
	SW8	7LBLK			ON	ON
	SW201	FR DET	ON	ON	ON	ON
	SW203	VIDEO POS	6	6	8	8
	SW4	V BLK1	ALL OFF	ALL OFF	ALL OFF	ALL OFF
	SW5	V BLK2			ALL OFF	ALL OFF
W2	SW200	—	OFF	OFF		
	SW201		ON	ON	ON	ON
	SW800	VISC CONT			ON	ON
W3	SW201	—	NON TEST		NON TEST	
	SW202	—	NON TEST		NON TEST	
	SW304	Y SUPER LIM	ON	ON	ON	ON
	SW305	A EQ VAR				
	SW306	A EQ SW				
	SW704	C SUPER LIM	OFF	OFF	ON	ON
	SW1	VIDEO/SYNC	VIDEO		VIDEO	
W4	SW101	WOBBLING				
	SW201	YC CONT	NORM		NORM	
	SW701	2.7MHz GEN	NORM		NORM	
W5	SW3	AUTO H	UP SIDE		UP SIDE	
	SW700			AUTO (63)		AUTO (63)
B1	SW7	SELECTION	ALL OFF	ALL OFF	ALL OFF	ALL OFF
	SW3	PLAY DELAY	0	0	0	0
	SW1	SYPER	OFF	OFF	OFF	OFF
	SW2	SYNC HRON1	ON		ON	
B2	SW5	ID PRESET	OFF	OFF	OFF	OFF
	SW7	VITC REC	ON	ON	ON	ON
	SW1	REG/PRE	REGEN	REGEN	REGEN	REGEN
	SW4	REC RUN	REC RUN	REC RUN	REC RUN	REC RUN

Circuit Board	Ref. No.	NAME	Shipment Mode			
			NTSC		PAL	
			AU-65H	AU-63H/62H	AU-65H	AU-63H/62H
AUDIO IN/OUT	SW101	LINE IN	+4dBu		+0dBu	
	SW301	LINE IN				
	SW102	LINE IN	+4dBu	+4dBu	+0dBu	+0dBu
	SW302	LINE IN	+4dBu	+4dBu	+0dBu	+0dBu
		CH1 ~ 4Ω				
		CH3/4 SERE				
VIDEO IN/OUT	SW1	VIDEO 75Ω	ON		ON	
	SW2	REF 75Ω	ON	ON	ON	ON
		COMP-CTCM				
	SW3	PB LEV	NORM			
	SW4	PR LEV	NORM			
	SW5					
	SW6	PB LEV				
	SW7	PR LEV				
FRONT I/F		AUDIO PB 3	PRESET	PRESET	PRESET	PRESET
		AUDIO PB 4	PRESET	PRESET	PRESET	PRESET
		YC DELAY	PRESET	PRESET	PRESET	PRESET
		LIMITER	OFF		OFF	
		NR	OFF	OFF	OFF	OFF
		SYNC INT	AUTO		AUTO	
		CF	4F	4F	8F	8F
		VIDEO IN	COMP		COMP	
		VIDEO I/O	AUTO		AUTO	
		REMOTE	2 (9P)	2 (9P)	2 (9P)	2 (9P)
		REC INH	OFF		OFF	
		MIXING				
		TC TRACK				
FRONT UP		POWER SW	OFF	OFF	OFF	OFF
		AUDIO VR	PUSH	PUSH	PUSH	PUSH
		VIDEO-CH4	VIDEO	VIDEO	VIDEO	VIDEO
		VIDEO	PUSH	PUSH	PUSH	PUSH
		TRACKING	CLICK	CLICK (62)	CLICK	CLICK (82)
		AUDIO METER	LINEAR	LINEAR	LINEAR	LINEAR

Circuit Board	Ref. No.	NAME	Shipment Mode			
			NTSC		PAL	
			AU-65H	AU-63H/62H	AU-65H	AU-63H/62H
FRONT MID		INT-EXT	INT		INT	
		TC-UB	TC	TC	TC	TC
		LTC-VITC	LTC	LTC	LTC	LTC
		DF-NDF	DF	DF		
		PREROLL	5	5	5	5
PULL OUT DRAWER VR		Pb	CLICK	CLICK	CLICK	CLICK
		Pr	CLICK	CLICK	CLICK	CLICK
		Y	CLICK	CLICK	CLICK	CLICK
		SET UP	CLICK	CLICK	CLICK	CLICK
		CHROMA	CLICK	CLICK	CLICK	CLICK
		HUE	CLICK	CLICK	CLICK	CLICK
		REM-LOCAL	LOCAL	LOCAL	LOCAL	LOCAL
		SYNC				
		BURST				
		SCH ADJ.				
		HEAD PHONE	MIN	MIN	MIN	MIN
		AUDIO MONI	ST	ST	ST	ST
		FM/LINEAR	LINEAR	LINEAR	LINEAR	LINEAR
		MODE	EE		EE	
		HEAD	R/P		R/P	
		INPUT	COMP		COMP	
		CONTROL	LOCAL	LOCAL	LOCAL	LOCAL
		SHTL SEL		VAR (63)		VAR (63)